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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,482	09/24/2003	Vishwas P. Durai	200208548-01	8013

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EXAMINER

TRUONG, LECHI

ART UNIT	PAPER NUMBER
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2194

MAIL DATE	DELIVERY MODE
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06/04/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/670,482

Applicant(s)

DURAI, VISHWAS P.

Examiner

LeChi Truong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on the amendment filed on 9/24/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-18 are presented for the examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claims 11, 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. The claim languages in the following claims are not clearly understood:

- i. As to claims 11, 12, it is uncertain what is meant by "PA-RISC tm", "PA-IPFtm "< ie, applicant is required to expand this abbreviation>.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-10, 13, 15-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sundaram et al (US 2004/0055003 A1) in view of Bitar et al (US. Patent 5,872936).

As to claim 1, Sundaram teaches the invention substantially as claimed including: a system call (a system call, para [0036], ln 0-14), a kernel thread (an operation system function, para [0036], ln 10-14), a user space (user space 11, para [0035], ln 9-13/ Fig. 4), a computer-implemented method for executing an application system call, said application system call involving invoking a kernel thread from a system call stub in a user space of an operating system of said computer (para [0036], ln 8-14 , saving context data in a save state upon entering a kernel space from said user space(para0008], ln 14-17, para[0051], ln 1-4), a return pointer (sets taskContext pointer 133 , para[0057], ln 10-14/ para[0060], ln 14-23), a unblock handler call stub(task stack 118, para[0057], ln 10-14/ para[0060], ln 14-23) , a unblock handler call stub in user space(user task stacks 118 are located within user space 111, para[0037], ln 5-8), modifying a return pointer in said save state to an address of a unblock handler call stub in user space instead of an address of said system call stub in said user space(para[0057], ln 10-14/ para[0060], ln 14-23/ Fig. 5a) , thereby causing said kernel thread to return to said unblock call handler stub instead of returning to said system call stub when said kernel thread completes execution(para[0057], ln 10-18, para[0060], ln 14-20) .

Sundaram does not explicitly teach an address of said system call stub in said user space. However, Bitar teaches an address of said system call stub in said user space (the user-level threads are lightweight because the management operations are implemented as procedure calls, col 2, ln 49-52/ If thread runnable, its user state is saved to a predefined location in the user's memory, the register save area. The address of the register save area is part of each thread's context as the kernel must be able to find the rsa at all times during the execution of thread, col 12, ln 27-33).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the teaching of Sundaram to incorporate the feature of an address of said system call stub in said user space because this provides an efficient way of switching from one user thread to the next user thread without entry into kernel space.

As to claim 2, Sundaram teaches registering said address of said unblock call handler stub with a kernel of said operating system prior to said executing said application said system call (para [0058], ln 1-12).

As to claim 3, Sundaram teaches registering is performed during application startup (para [0007], ln 1-10).

As to claim 4, Bitar teaches registering is performed during a thread library startup (col 8, ln 46-55).

As to claim 5, Sundaram teaches registering a data pointer associated with said address of said unblock call handler stub with said kernel (para [0058], ln 1-12).

As to claim 6, Bitar teaches passing, after said saving, a data pointer associated with said system call stub as an argument to said unblock call handler stub (col 3, ln 33-38).

As to claim 7, Sundaram teaches further including passing, after said saving, a return value of said system call and an address of said system call stub as arguments to said unblock call handler stub (para [0050], ln 10-16 and para [0057], ln 11-7).

As to claim 8, Sundaram teaches unblock call handler stub to an unblock call handler routine in said user space (para [0057], ln 1-7/ Fig. 4).

As to claim 9, Bitar teaches executing without returning to said kernel space (col 5, ln 54-58).

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As to claim 10, Bitar teaches said unblock call handler routine includes code for notifying a scheduler in said user space that said kernel thread is unblocked (col 1, ln 34-37 and col 5, ln 5-15).

As to claim 13, Bitar teaches implements M.times.N threading (col 1, ln 40-50).

As to claims 15-28, they are apparatus claims of claims 1-10, 13; therefore, they are rejected for the same reasons as claims 1-10, 13.

4. Claims **11, 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sundaram et al (US 2004/0055003 A1) in view of Bitar et al (US. Patent 5,872936) and further in view of Aries (5)(Itanium processor Family Only HP-UX 11i Version 1.6: June 2002).

As to claim 11, 12, Sundaram and Bitar do not teaches PA-RISC, PA-IPF architecture. However, Aries teaches PA-RISC, PA-IPF architecture (The HP-UX IPF kernel recognizes a HP-UX-PA-RISC, page 1, ln 7-8).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the teaching of Sundaram and Bitar to incorporate the feature of PA-RISC, PA-IPF architecture because this provides various processors for supporting system calls on the kernel and user mode.

5. Claim **14** is rejected under 35 U.S.C. 103(a) as being unpatentable over Sundaram et al (US 2004/0055003 A1) in view of Bitar et al (US. Patent 5,872936) and further in view of Freund (US. Patent 5,680618).

As to claim 14, Sundaram and Bitar do not teach system call involves accessing an I/O device. However, Freund teaches system call involves accessing an I/O device (the invoked method of the default driver calls the file's i/o module of data engine 540, col 17, ln 33-35/ col 8, ln 33-40).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the teaching of Sundaram and Bitar to incorporate the feature of system call involves accessing because this allows the user can access and manipulate foreign data in real-time, including in multi-user environments.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LeChi Truong whose telephone number is (571) 272 3767. The examiner can normally be reached on 8 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomson, William can be reached on (571) 272 3718. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIP. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIP system, contact the Electronic Business Center (EBC) at 866-217-9197(toll-free).

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LeChi Truong

May 25, 2007


CAMERON THOMSON
UNITED STATES PATENT EXAMINER
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